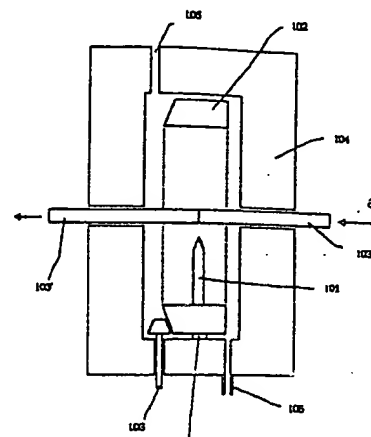


(54) WELD HEAD AND WELDING EQUIPMENT

(11) 6-142932 (A) (43) 24.5.1994 (19) JP
 (21) Appl. No. 5-118370 (22) 20.5.1993
 (71) TADAHIRO OMI (72) TADAHIRO OMI(1)
 (51) Int. Cl⁵. B23K9/16, B23K9/00, B23K9/023, B23K9/167//B23K101/06

PURPOSE: To efficiently eliminate atmospheric components to the outside of a frame, to suppress the generation of an oxide film of a weld zone and to form the clean face of weld of surrounding the weld zone and an electrode by the outside frame and providing an introduction port and a discharge port of shielding gas on the outside frame.

CONSTITUTION: High-frequency electric power is supplied to an annular member 102 via a current introduction terminal 107 provided on the outside frame 104 and electric discharge is generated between the electrode 101 and piping 103 as a member to be welded. The shielding gas is introduced into welding space in the piping 103, 103' and the outside frame 104 from the introduction port 105 and discharged from the discharge port 106. The welding middle is purged by the shielding gas, then, the high-frequency electric power is impressed on the electrode 101 and the piping 103 is welded. Consequently, the burning in the vicinity of the member to be welded can be prevented.



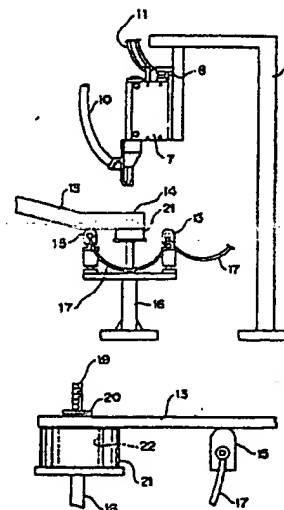
a: gas

(54) STUD WELDING METHOD

(11) 6-142933 (A) (43) 24.5.1994 (19) JP
 (21) Appl. No. 4-297368 (22) 6.11.1992
 (71) POP RIVET FASTENER K.K. (72) MASARU KITO
 (51) Int. Cl⁵. B23K9/20

PURPOSE: To make a magnetic field uniform in the vicinity of the stud tip and to prevent deflection of arc discharge even in the vicinity of a work piece end.

CONSTITUTION: The welding method where the tip of a stud supported on a welding gun 7 is arranged toward a welding part of a work piece 13, arc discharge is generated between the stud and the work piece 13, the stud tip and the work piece part are molten by the discharge and the stud tip is abutted on a molten part of the work piece is provided. A hollow cylindrical member 21 having the larger inside diameter than the tip 20 of the stud 19 and made of magnetically permeable material is prepared and the cylindrical member 21 is arranged so that a hollow part is located at the position corresponding to the stud tip which is the work piece 13 surface on the opposite side to the stud during arc discharge.

**(54) ARC WELDING METHOD FOR GALVANIZED STEEL SHEETS**

(11) 6-142934 (A) (43) 24.5.1994 (19) JP
 (21) Appl. No. 4-297154 (22) 6.11.1992
 (71) NIPPON STEEL CORP (72) TAKASHI HOTTA(1)
 (51) Int. Cl⁵. B23K9/23, B23K9/235, B23K31/00

PURPOSE: To provide the method capable of arc-welding the galvanized steel sheets while the occurrence of weld defects such as a blowhole and a pit is prevented.

CONSTITUTION: The surface of the galvanized steel sheets 1 is preheated by a preheating torch 4 to remove zinc from the joining surfaces and then, arc welding is performed by a welding torch 3. A postheating torch is then provided behind the welding torch 3, a molten pool or a bead is postheated right after arc welding is performed and the blowhole is floated and discharged in the air as zinc gas.

